OFFICE OF CONGRESSMAN EARL BLUMENAUER
APPROPRIATIONS REQUEST FORM
FISCAL YEAR 2011

Project Details

1. Project title:

Oregon Center for Translational Genomics

2. Organization name and address (the recipient of the funds)**:**

Oregon Health & Science University
3181 SW Sam Jackson Park Road
Portland, OR 97239

3. Contact information

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Project location (if different than organization's address): Same

4. Please describe the requesting organization's main activities.

Oregon Health & Science University is the state's only academic health center. OHSU's serves 210,000 patients annually, and is a conduit for learning for more than 4,100 students and trainees. OHSU is the source of more than 200 community outreach programs that bring health and education services to every county in the state.

A leader in research, OHSU earned $307.1 million in research funding in FY 2009 with more than 4,100 research projects currently under way. OHSU serves as a catalyst for the region's bioscience industry, averaging one new breakthrough every three days.

5. Is this organization a public, private non-profit, or private for-profit entity?

OHSU is a public entity.

6. From what federal agency and account are you requesting funds (Please be specific –e.g., Department of Housing and Urban Development, Economic Development Initiatives account)?
Department of Health and Human Services: HRSA

7. Briefly describe the activity or project for which funding is requested (no more than 500 words)**.**
The past 10 years has witnessed a revolution in genome science. However, translating this knowledge into personalized medicine remains a challenge. For medicine to advance, we must be able to understand how individual genetic differences lead to the development of disease and to different treatment responses. If we can rapidly and accurately identify these complex groups of genes, we can determine an individual's risk for disease and employ adequate prevention. We can also find treatments that respond best to an individual's genetic makeup.

OHSU is an international leader in "individualized" medicine due to the work of OHSU Knight Cancer Center director Dr. Brian Druker. Dr. Druker was the first scientist to use individual genetic information to develop the targeted treatment of cancer cells i.e. a treatment that attacked only the cancer cells. This major breakthrough confirmed that individualized medicine is an effective and valid way of treating our most grave diseases.

The Oregon Center for Translational Genomics at OHSU focuses on finding specific genetic markers that predict disease risk and treatment response. Currently, the Center is focusing on some cancers, type II diabetes, obesity, osteoporosis, alcohol and substance abuse and rarer diseases, especially the "orphan" pediatric disorders. The Center serves as a shared resource to OHSU faculty from multiple departments and research institutes and to all of Oregon's scientists, offering the ability to a more affordable means to access highly specialized and expensive technology that cannot be supported by individual labs. The center aims to provide intellectual and technical resources that can assist researchers in designing and conducting the proper experiments, preparing the appropriate samples for analysis, analyzing them in the most appropriate manner, and assisting in correctly interpreting the results. Finally, the center will have an important outreach function in explaining to the public the significance of this new data, the ethics of obtaining and using the data and how such data will benefit all Oregonians.

OHSU has recently received ARRA funding to hire a new faculty member with expertise in translational genomics. In addition, OHSU has used a Murdock Foundation grant to purchase a high throughput next-generation sequencer (Illumina IIx), which is capable of sequencing genomes at least two orders of magnitude faster than was previously possible. The 2010 federal appropriation for the OCTG will be used to purchase the needed computer hardware to store and analyze the highly complex genomic data.

FY 2011 funding is requested to purchase a state-of-the-art, 3rd generation high throughput sequencer, the Pacific BioSciences SMRT Sequencer. This sequencer will be up to 20,000 times faster than OHSU's current sequencing equipment. The additional sequencing equipment will be key to meeting the Center's future demand. (Thirty of these sequencers have already been purchased by the Broad Institute (Harvard/MIT). Such an instrument will truly bring personalized medicine into regular clinical practice and will eventually be capable of sequencing an entire human genome in less than 10 minutes.

8. What is the purpose of the project? Why is it a valuable use of taxpayer funds? How will the project support efforts to improve the economy and create jobs in Oregon?
This center would certainly benefit Oregonians (and all Americans) by advancing individualized medicine for the treatment of numerous diseases including many cancers, drug (especially methamphetamine) and alcohol abuse, obesity and diabetes, and a variety of neurological disorders (especially multiple sclerosis). As noted above this emphasis builds on the groundbreaking work of OHSU Knight Cancer Center director, Dr. Brian Druker, who showed that personalized medicine is not something hypothetical but something that works, saves lives and is extremely cost-effective. Continued development of the OCTG will allow Dr Druker and other scientists at OHSU and throughout Oregon to meet demands for high quality genomic information on thousands of individuals and the associated tissue samples.

Investment in biomedical research has been shown to create good paying jobs and generate state business activity through the increased output of goods and services. More specifically, researchers are highly skilled employees who earn higher-than average wages, spend money in the local and state economies, and contribute their intellectual capital and expertise to the civic life of the region. We estimate that when fully functional, the Center will have created 7-10 science related jobs. This does not taken into account the jobs that will indirectly be created as a result of the multiplier effect that OHSU has on job creation and the economy in Oregon. According to the Association of American Medical Colleges, every dollar directly spent by OHSU generates indirectly an additional $1.30 for a total economic impact of $2.30. Economic activity associated with research and development represents a net economic gain to Portland and the state. OHSU's academic and clinical research activities also attract relatively highly paid specialists to the area, and in some cases create access to specialty services for which residents might otherwise have to leave the state. In addition, licensed technology developed through research at OHSU not only generates revenue for the university, but also can lead to advances in healthcare, science and biomedical technology. In 2007, researchers filed 66 patent applications and disclosed 132 new inventions. Collaboration and innovative business partnerships facilitate the transfer of laboratory research into marketable products that benefit the public by improving health and healthcare practices and by contributing to economic growth.

9. Has this project received federal appropriations funding in past fiscal years?
Yes.

9a. If yes, please provide the fiscal year, Department, Account, and funding amount of any previous funding.
FY 2010, Department of Health and Human Services, HRSA, $200,000, which will be used to purchase needed computer hardware to store and analyze highly complex genomic data.

Funding Details

10. Amount requested for this project: $695,000

11. Breakdown/budget of the amount you are requesting for this project (e.g., salary $40,000; computer $3,000):
Center for Translational Genomics: $695,000

12. What is the <u>total</u> cost of the project?
The total estimated cost for making the OCTG fully functional is $8 million; $5 to 6 million of this amount is for hiring of new personnel.

13. Is this project scalable (i.e., If partial funding is awarded, will the organization still be able to use the funds in FY 2011?)?
Yes; funds could be redirected toward current equipment upgrades.

14. What other funding sources (local, regional, state) are contributing to this project or activity? (Please be specific about funding sources and funding amounts)
We anticipate full funding of the OCTG as a phased project, with remaining funds to be contributed by OHSU through private fundraising and other non-federal funds. For example the Murdoch Foundation has already contributed $500,000 that was used to purchase a next-generation sequencer.

15. Please list public or private organizations that have supported/endorsed this project.
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